

CLAIMS

What is claimed is:

1. A filter comprising first and second axially spaced end caps, said second end cap having an axial flow opening therethrough, filter media extending axially between said end caps and extending in a closed-loop around a perimeter defining a hollow interior communicating with said axial flow opening, wherein fluid to be filtered flows laterally through said filter media and axially through said hollow interior and said axial flow opening, at least one column extending axially in said hollow interior between said end caps and laterally spaced from said axial flow opening, said column having a hollow sub-interior for receiving a post extending axially thereinto from a base for mounting the filter to the base.
2. The filter according to claim 1 wherein said post applies axial compression force between said end caps, and said column supports said axial compression force without the need for inner and outer filter media liners.
3. The filter according to claim 2 wherein said filter media has no inner liner and no outer liner.
4. The filter according to claim 1 wherein said second end cap is adjacent said base, and said post extends axially through said column sub-interior to said first end cap and is releasably mounted thereto for applying axial compression force.
5. The filter according to claim 1 comprising a seal sealing said sub-interior of said column from said interior of said filter media to block contaminant flow therebetween.
6. The filter according to claim 5 wherein said seal is located on

said column.

7. The filter according to claim 6 wherein said column comprises first and second sleeves extending respectively from said first and second end caps axially towards each other and engaging each other in axially overlapped telescoped relation, one of said sleeves having an annular sealing bead engaging the other sleeve
5 in sealing relation to seal said sub-interior of said column within said sleeves from said interior of said filter media to block contaminant flow therebetween.

8. The filter according to claim 7 wherein said sleeves engage each other in said axially overlapped telescoped relation at a junction having an inner sleeve portion, and having an outer sleeve portion circumscribing said inner sleeve portion, said inner sleeve portion having an outer surface, said outer sleeve portion
5 having an inner surface, said outer surface of said inner sleeve portion facing said inner surface of said outer sleeve portion and sealed thereto by said sealing bead.

9. The filter according to claim 8 wherein said sealing bead is on said inner surface of said outer sleeve portion.

10. The filter according to claim 8 wherein said first end cap and said first sleeve are an integrally molded first singular piece, and said second end cap and said second sleeve are an integrally molded second singular piece, and wherein said sealing bead is an integrally molded part of one of said first and second singular
5 molded pieces.

11. The filter according to claim 1 wherein said column comprises first and second sleeves extending respectively from said first and second end caps axially towards each other and engaging each other in axially overlapped telescoped relation, one of said sleeves having a stop engaging the other sleeve and stopping

5 axial travel of said sleeves toward each other, to provide support for axial compression force.

12. The filter according to claim 1 wherein said filter is an air filter, and dirty air flows laterally inwardly through said filter media into said hollow interior as clean air and then flows axially through said axial flow opening, and comprising an O-ring sealing said second end cap at said axial flow opening to said
5 base externally of said hollow interior.

13. A filter comprising first and second axially spaced end caps, said second end cap having an axial flow opening therethrough, filter media extending axially between said end caps and extending in a closed-loop around a perimeter defining a hollow interior communicating with said axial flow opening,
5 wherein fluid to be filtered flows laterally through said filter media and axially through said hollow interior and said axial flow opening, a pair of columns extending axially in said hollow interior between said end caps and laterally spaced from said axial flow opening on laterally distally opposite sides thereof, each column having a hollow sub-interior for receiving a respective post extending axially thereinto from a
10 base for mounting the filter to the base, the posts applying axial compression force between said end caps on laterally distally opposite sides of said axial flow opening, said columns supporting said axial compression force on laterally distally opposite sides of said axial flow opening.

14. The filter according to claim 13 comprising a pair of seals, each provided at a respective one of said columns and sealing the respective said sub-interior of the respective said column from said interior of said filter media to block contaminant flow therebetween.

15. The filter according to claim 13 wherein a first of said columns

comprises first and second sleeves extending respectively from said first and second end caps axially towards and engaging each other and supporting said axial compression force, and the second of said columns comprises third and fourth sleeves
5 extending respectively from said first and second end caps axially towards and engaging each other and supporting said axial compression force.

16. The filter according to claim 15 wherein said first and second sleeves engage each other in axially overlapped telescoped relation, one of said first and second sleeves having a first annular sealing bead engaging the other of said first and second sleeves in sealing relation to seal said sub-interior of said first column
5 within said first and second sleeves from said hollow interior of said filter media to block contaminant flow therebetween, and wherein said third and fourth sleeves engage each other in axially overlapped telescoped relation, one of said third and fourth sleeves having a second annular sealing bead engaging the other of said third and fourth sleeves in sealing relation to seal said sub-interior of said second column
10 within said third and fourth sleeves from said interior of said filter media to block contaminant flow therebetween.

17. The filter according to claim 16 wherein said one of said first and second sleeves has a first stop engaging the other of said first and second sleeves and stopping axial travel of said first and second sleeves toward each other, to provide said first column support for said axial compression force, and wherein one of said
5 third and fourth sleeves has a second stop engaging the other of said third and fourth sleeves and stopping axial travel of said third and fourth sleeves toward each other, to provide said second column support for said axial compression force.